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MATERIAL SAFETY DATA SHEET

James Alexander Corporation 845 Route 94 Blairstown, NJ 07825

Product Name: AMMONIA INHALANT SOLUTION

MSDS Effective Date: September 10, 2001

CHEMTREC 24 Hour Emergency Phone: (800) 424-9300 **Note:** The CHEMTREC emergency number is to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to JAC at (908) 362-9266.

I. PRODUCT IDENTIFICATION

Manufacturer's Name: James Alexander Corporation **Phone**: (908)362-9266
Emergency Telephone No.: (800)424-9300 (CHEMTREC)

Address: 845 Route 94 Blairstown, NJ 07825

Product Name: AMMONIA INHALANT SOLUTION

Synonyms: N/A

D.O.T. Shipping Name: Air shipments: Flammable Liquid Corrosive NOS, 3- UN 2924, PGII (Ammonia, ethanol)
Ground shipments: Consumer Commodity- ORM-D

NFPA Ratings: Health - 3 Flammability - 3 Instability - 1

II. HAZARDOUS INGREDIENTS

			OSHA	ACGIH	
Component	**CAS No.**	**%**	**PEL/TWA**	**TLV/TWA**	**TLV/STEL**
Ammonia	7664-41-7	17.5	50 ppm	25 ppm	35 ppm
Ethyl Alcohol	64-17-5	37.5	1000 ppm	1000 ppm	Not listed

III. PHYSICAL DATA

Boiling Point: N/A for mixtures **Melting Point**: Unknown

Specific Gravity: 0.891 25/25 **Vapor Pressure**: Unknown

Vapor Density: Unknown **Solubility in water**: Very soluble

% volatiles by vol.: 55% **Evaporation Rate** (Butyl acetate=1): Unknown

Appearance and odor: Clear, pink to light red liquid. Pungent odor of ammonia.

pH: Unknown

IV FIRE & EXPLOSION INFORMATION

Flash Point: Less than 50 degrees F **Test Method**: Pensky Martens Closed Cup
Autoignition temp: Ammonia 1204 degrees F (651^{o}C); Ethyl Alcohol: 685 degrees F (363^{o}C)

Flammable limits in air % by volume: Lower (Unknown) Upper(Unknown)

Extinguishing media: "Alcohol resistant" foam, CO_2 or dry chemical.

Special fire fighting procedures:

NOTE: Individuals should perform only those fire-fighting procedures for which they have been trained.

Remove all sources of ignition. Move exposed containers from fire area if it can be done without risk. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode. Spray extinguishing media directly into base of flames. Water may be used to keep fire-exposed containers cool.

Unusual fire and explosion hazard: When heated, mixture will give off ammonia gas, a strong irritant to eyes, respiratory tract, and mucous membranes. Other toxic gases produced are oxides of nitrogen, carbon monoxide, carbon dioxide and hydrogen. Closed containers exposed to heat may develop pressure and explode.

Alcohol vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. Alcohols burn with a pale blue flame which may be extremely hard to see under normal lighting conditions. Personnel may be able to feel the heat of the fire without seeing flames. Extreme caution must be exercised in fighting alcohol fires.

------------------------V. HEALTH HAZARD INFORMATION ------------------------

Primary routes of exposure: Inhalation, eye contact, skin contact, ingestion.

Signs and symptoms of overexposure:

Inhalation: Irritation or burns of the respiratory system, headache, coughing, lung congestion or inflammation, pulmonary edema, breathing difficulty. Headache, dizziness, drowsiness, loss of appetite and an inability to concentrate.

Eye contact: Severe irritation or burns, may lead to blindness.

Skin contact: Local irritation, dry skin, burns.

Ingestion: Burning pain in mouth, throat, constriction of throat, coughing, followed by nausea, vomiting or diarrhea. Ingestion may prove fatal.

Medical Conditions Aggravated by Exposure: Individuals with pre-existing nervous system disorders, skin disorders, eye problems, or impaired respiratory function may be more susceptible to the effects of overexposure.

---------------VI. EMERGENCY AND FIRST AID PROCEDURES ---------------

For Inhalation: Remove subject immediately to fresh air. Give artificial respiration if victim is not breathing. If breathing is difficult, give oxygen. Get immediate medical attention.

For Eye Contact: Immediately flush eyes with copious amounts of water for at least 15 minutes. Eyelids should be held apart and away from eyeball for thorough rinsing. Do not permit victim to rub eyes. Get immediate medical attention.

For Skin Contact: Immediately flush skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Do not rub or apply ointment to affected area. Obtain medical attention if irritation persists. Wash clothing before re-use.

For Ingestion: Contact a Poison Control Center *immediately*. Do NOT induce vomiting. If conscious, have victim swallow large amounts of water. Do not give anything by mouth to an unconscious or convulsing person. Get *immediate* medical attention.

-----------------------------------VII. TOXICITY DATA -------------------------------------

None of the components present in this formulation are currently classified as carcinogens in the NTP Annual Report on Carcinogens, IARC Monographs or by OSHA.

----------------------------VIII. PERSONAL PROTECTION ----------------------------

Storage Requirements: Protect containers from physical damage. Detached or outside storage is preferred. Inside storage should be in an NFPA approved flammable liquids storage room or cabinet. Store in corrosion-proof area at temperatures below 77 degrees F (25^{o}C). Do not store in direct sunlight. Isolate from incompatible materials. Keep containers tightly closed.

Handling Requirements: All ignition sources should be eliminated. Remove closure carefully; internal pressure may be present. Keep closure up to prevent leakage. When contents are being transferred, metallic containers must be bonded to the receiving container and grounded to avoid static discharges. Never use pressure to empty containers. Replace closure carefully after each opening.

Ventilation: Not required for product (JAC unit dose inhalant) use. When handling bulk material, use general or local exhaust ventilation to meet TLV requirements. Where engineering controls are not feasible or sufficient to achieve full conformance with acceptable exposure limits, use NIOSH approved respiratory protection equipment. Care must be taken to assure that any respirator chosen is capable of protecting the user from **both ammonia and ethyl alcohol vapors**. In some cases, a self-contained breathing apparatus may be advisable.

Eye Protection: Not required for product (JAC unit dose inhalant) use. When handling bulk material, always wear gas-tight, splash-proof chemical safety goggles meeting OSHA 29CFR 1910.133 specifications.

Skin Protection: Not required for product (JAC unit dose inhalant) use. Use rubber gloves, protective suit, face shield and overshoes when handling bulk product.

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------------------------------IX. HAZARDOUS REACTIVITY ------------------------------

Stable at room temperature. Hazardous polymerization will not occur. However, product will react exothermically with acids. Releases ammonia vapor when heated. Ammonia component will decompose to hydrogen and oxides of nitrogen when heated. Carbon monoxide gas may also be produced when heated.

Conditions To Avoid: Sunlight, heat (heating above ambient temperatures causes the vapor pressure of the solution to increase).

Avoid mixing with acids, most common metals, strong oxidizing agents, brass, zinc, chlorine, aluminum, copper, bronze, mercury, dimethyl sulfate and acetyl chloride.

----------------X SPILL, LEAK AND DISPOSAL PROCEDURES -----------------

For large spills, stop leak if you can do so without risk. Extinguish all sources of ignition. Wear self-contained breathing apparatus, chemical safety goggles and full protective clothing. Ventilate area. Spilled liquids should be contained and not washed into sewers or ground water. Contain by diking with non-combustible absorbent materials and place residue in DOT approved waste container.

Comply with all applicable local, state and federal regulations on spill reporting, handling and disposal of waste.

Other Precautions: Containers, even those that have been emptied, will retain product residue and vapors. Handle empty containers as if they were full.

Prepared By: David Robinson
Title: Vice President
Date of Initial Preparation: June 1989
Latest Revision Date: September 10, 2001

NOTE: This Material Safety Data Sheet is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, the safe handling of chemical materials. James Alexander Corporation (JAC), expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose with respect to the product or information provided herein.

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